



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2021-0701; Project Identifier MCAI-2021-00365-T;

Amendment 39-21704; AD 2021-18-03]

RIN 2120-AA64

**Airworthiness Directives;** Yaborã Indústria Aeronáutica S.A. (Type Certificate

Previously Held by Embraer S.A.) Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 2020-26-02, which applied to certain Yaborã Indústria Aeronáutica S.A. (type certificate previously held by Embraer S.A.) Model ERJ 190-400 airplanes. AD 2020-26-02 required amending the existing airplane flight manual (AFM) to incorporate a new limitation and revise certain normal procedures. This AD retains those requirements and also requires upgrading the electronic engine control (EEC) software, as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is incorporated by reference. This AD was prompted by a report of an in-flight shutdown (IFSD) due in part to failure in the low-pressure compressor (LPC) rotor 1 during operation in high altitude at high thrust settings, and by the development of updated EEC software, which would terminate the requirement to amend the existing AFM. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD becomes effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For material incorporated by reference (IBR) in this AD, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, BRAZIL, Tel: 55 (12) 3203-6600; E-mail: [pac@anac.gov.br](mailto:pac@anac.gov.br); Internet [www.anac.gov.br/en/](http://www.anac.gov.br/en/). You may find this IBR material on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>. You may view this IBR material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0701.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0701; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Krista Greer, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221; email [krista.greer@faa.gov](mailto:krista.greer@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued AD 2020-26-02, Amendment 39-21357 (85 FR 81790, December 17, 2020) (AD 2020-26-02), which applied to Yaborã Indústria Aeronáutica S.A. (type certificate previously held by Embraer S.A.) Model ERJ 190-400 airplanes. AD 2020-26-02 required amending the existing AFM to incorporate a new limitation and revise certain normal procedures. The FAA issued AD 2020-26-02 to address uncontained release of the LPC rotor 1 and damage to the engine and airplane structure, which could result in loss of control of the airplane.

### **Actions Since AD 2020-26-02 Was Issued**

AD 2020-26-02 and the corresponding ANAC AD 2020-07-01 considered their requirements interim action. ANAC AD 2020-07-01 indicated that further mandatory actions may be necessary as a result of the investigation into failures in engines similar to those on affected airplanes. The manufacturer has since developed upgraded EEC software that will prevent the unsafe condition. The FAA has determined that further rulemaking is necessary; this AD follows from that determination.

Since the FAA issued AD 2020-26-02, ANAC, which is the aviation authority for Brazil, has issued ANAC AD 2020-07-01R01, effective March 26, 2021 (ANAC AD 2020-07-01R01) (also referred to as the Mandatory Continuing Airworthiness Information, or the MCAI), to correct an unsafe condition for certain Model ERJ 190-400 airplanes. ANAC AD 2020-07-01R01 supersedes ANAC AD 2020-07-01.

This AD was prompted by a report of an IFSD due in part to failure in the LPC rotor 1 during operation in high altitude at high thrust settings, and the development of upgraded EEC software, which eliminates the need for the amendments to the existing AFM required by AD 2020-26-02. The FAA is issuing this AD to address uncontained release of the LPC rotor 1 and damage to the engine and airplane structure, which could result in loss of control of the airplane. See the MCAI for additional background information.

### **Explanation of Retained Requirements**

Although this AD does not explicitly restate the requirements of AD 2020-26-02, this AD retains all of the requirements of AD 2020-26-02. Those requirements are referenced in ANAC AD 2020-07-01R01, which, in turn, is referenced in paragraph (g) of this AD.

### **Related Service Information under 1 CFR Part 51**

ANAC AD 2020-07-01R01 describes procedures for amending the existing AFM to incorporate a new limitation and revise the normal procedures to limit the engine N1 setting for flights above 33000 ft. ANAC AD 2020-07-01R01 also describes procedures for upgrading the EEC software and subsequently removing the AFM amendments. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **FAA's Determination**

This product has been approved by the aviation authority of another country, and

is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the State of Design Authority, the FAA has been notified of the unsafe condition described in the MCAI referenced above. The FAA is issuing this AD because the FAA has evaluated all pertinent information and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

#### **Requirements of this AD**

This AD requires accomplishing the actions specified in the MCAI described previously, as incorporated by reference, except for any differences identified as exceptions in the regulatory text of this AD.

#### **Explanation of Required Compliance Information**

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has been coordinating this process with manufacturers and CAAs. As a result, ANAC AD 2020-07-01R01 is incorporated by reference in this AD. This AD requires compliance with ANAC AD 2020-07-01R01 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this AD. Service information required by ANAC AD 2020-07-01R01 for compliance will be available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0701 after this AD is published.

#### **FAA's Justification and Determination of the Effective Date**

There are currently no domestic operators of these products. Therefore, the FAA finds that notice and opportunity for prior public comment are unnecessary and that good cause exists for making this amendment effective in less than 30 days.

## **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0701; Project Identifier MCAI-2021-00365-T” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

## **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Krista Greer, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221. Any commentary that the FAA receives which is not specifically designated as CBI will be

placed in the public docket for this rulemaking.

### **Interim Action**

The FAA considers this AD interim action. Investigation into failures in engines similar to those installed on the affected airplanes will enable the manufacturer to obtain better insight into the nature, cause, and extent of the IFSDs, and eventually to develop final action to address the unsafe condition. Once final action has been identified, the FAA might consider further rulemaking.

### **Regulatory Flexibility Act (RFA)**

The requirements of the RFA do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

### **Costs of Compliance**

Currently, there are no affected U.S.-registered airplanes. If an affected airplane is imported and placed on the U.S. Register in the future, the FAA provides the following cost estimates to comply with this AD:

#### **Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Retained actions from AD 2020-26-02	1 work-hour X \$85 per hour = \$85	\$0	\$85
New required actions	Up to 3 work-hours X \$85 per hour = Up to \$255	\$0	Up to \$255

According to the manufacturer, some or all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected operators. The

FAA does not control warranty coverage for affected operators. As a result, the FAA has included all known costs in the cost estimate.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

The FAA determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.



## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by:

a. Removing airworthiness directive (AD) 2020-26-02, Amendment 39-21357 (85 FR 81790, December 17, 2020), and

b. Adding the following new AD:

**2021-18-03 Yaborã Indústria Aeronáutica S.A. (Type Certificate Previously Held by Embraer S.A.) Airplanes:** Amendment 39-21704; Docket No. FAA-2021-0701; Project Identifier MCAI-2021-00365-T.

#### **(a) Effective Date**

This airworthiness directive (AD) becomes effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD replaces AD 2020-26-02, Amendment 39-21357 (85 FR 81790, December 17, 2020) (AD 2020-26-02).

#### **(c) Applicability**

This AD applies to Yaborã Indústria Aeronáutica S.A. (type certificate previously held by Embraer S.A.) Model ERJ 190-400 airplanes, certificated in any category, as identified in Agência Nacional de Aviação Civil (ANAC) AD 2020-07-01R01, effective March 26, 2021 (ANAC AD 2020-07-01R01).

**(d) Subject**

Air Transport Association (ATA) of America Code 72, Turbine/turboprop engine.

**(e) Reason**

This AD was prompted by a report of an in-flight shutdown (IFSD) due in part to failure in the low-pressure compressor (LPC) rotor 1 during operation in high altitude at high thrust settings, and by the development of updated electronic engine control (EEC) software that will prevent the unsafe condition. The FAA is issuing this AD to address uncontained release of the LPC rotor 1 and damage to the engine and airplane structure, which could result in loss of control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Requirements**

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, ANAC AD 2020-07-01R01.

**(h) Exceptions to ANAC AD 2020-07-01R01**

(1) Where ANAC AD 2020-07-01R01 refers to “the effective date of [ANAC] AD 2020-07-01,” this AD requires using January 4, 2021 (the effective date of FAA AD 2020-26-02).

(2) Where ANAC AD 2020-07-01R01 says to “upgrade de EEC software,” this AD requires to “upgrade the EEC software.”

(3) Where ANAC AD 2020-07-01R01 refers to its effective date, this AD requires using the effective date of this AD.

(4) The “Alternative method of compliance (AMOCs)” section of ANAC AD 2020-07-01R01 does not apply to this AD.

(5) Where paragraph (c)(2) of ANAC AD 2020-07-01R01 requires removing the airplane flight manual (AFM) amendments, this AD requires that the amendments to the existing AFM be removed before further flight after the EEC software has been updated.

**(i) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, Large Aircraft Section, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the Large Aircraft Section, International Validation Branch, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

**(j) Related Information**

For more information about this AD, contact Krista Greer, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221; email [krista.greer@faa.gov](mailto:krista.greer@faa.gov).

**(j) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Agência Nacional de Aviação Civil (ANAC) AD 2020-07-01R01, effective March 26, 2021.

(ii) [Reserved]

(3) For ANAC AD 2020-07-01R01, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, BRAZIL, Tel: 55 (12) 3203-6600; E-mail: [pac@anac.gov.br](mailto:pac@anac.gov.br); Internet [www.anac.gov.br/en/](http://www.anac.gov.br/en/). You may find this IBR material on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. This material may be found in the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0701.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on September 9, 2021.

Ross Landes, Deputy Director for Regulatory Operations,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

